

REMARKS

The Applicants are in receipt of the Office Action of November 10, 2008, and after careful study of this Office Action have the following comments.

Claim 1 has been amended to rearrange the phrase "a restoring force is substantially constant" and the phrase "for securing" has been replaced with "secures", for clarity. Claim 1 has also been amended to include the phrase "and, allows for lateral displacement between said upper and lower plates without separation of said upper and lower plates". This amendment is supported, for example, in the Summary of the Invention on page 4, lines 8-10 and in the Detailed Description of Exemplary Embodiments on page 9, lines 8-11. The phrase "vertical displacement of said upper and lower plates is near zero" has been deleted. Also, claim 1 has been amended to indicate that the conical bearing surfaces of the upper plate and the lower plate are linked by connecting members. Support for this amendment may be found e.g., at page 8 of the specification.

Claims 5 and 6 have been amended to include the word "solid". Support for this amendment can be found, for example, in the Detailed Description of Exemplary Embodiments on page 8, lines 28-31, where the filler material is disclosed to be either plastic, fabric, metal or the like, all being solid materials. This amendment is also being made for clarity.

Claims 7, 8 and 9 have been amended to delete the phrase "open pan". In addition, claim 7 has been amended to delete the

phrase "wherein said first open pan structure has a plurality of rigid members connected to said plates forming a quadrilateral, said first open pan structure having openings between each plate." The word "defining" has been replaced with the word "define" for clarity. Claim 7 has also been amended to include the phrase "steel recessed surface optionally coated with a protective layer". These amendments to claims 7, 8 and 9 are supported, for example, by Figs. 1-5 and their descriptions in the Detailed Description of Embodiments on page 6, and lines 9-12, page 7, lines 12-35 and page 9, lines 8-11.

New claims 10 and 11 have been added. These claims are supported by original independent claims 1 and 7, as well as the specification at page 7, lines 12-35 and page 9, lines 8-11.

Drawings

The Examiner has indicated that the drawings are objected to for the following reasons:

- 1) failing to show the plurality of upper and lower interstitial regions (claims 3 and 4),
- 2) failing to show the upper and lower interstitial regions filled with filler (claims 5-6),
- 3) failing to show the following reference numerals described in the specification:
 - a. conical cavities 40
 - b. ball bearings 50,
 - c. interstitial regions 90, and
 - d. leaf springs 609.

Applicants herewith are submitting amended drawings showing

interstitial regions optionally filled with filler, and the features described above in 3)a-c.

Respectfully, Applicants note that the interstitial regions 90 (to which reference numerals are hereby added) are shown in e.g., Fig. 3 and 4. “[R]eferring particularly to Figure 3 . . . economical construction of plates 20, 30” comprise 4 plate segments 70 containing conical cavities or recesses connected by members 80 in a manner that creates interstitial regions 90. The upper plate is plate 30 and the lower plate is plate 20 (see page 7.) Thus, the specification indicates that plates 20 and 30 are essentially interchangeable, and are constructed in the same manner. For this reason, Fig. 3 and Fig. 4 each show an embodiment of an upper plate and of a lower plate.

Additionally, Figure 9 as filed does actually contain a reference number identifying the leaf spring 609.

For the reasons discussed above, along with the drawing amendments provided herein, none of which adds any new matter to the specification, Applicants believe they have addressed and met all of the Examiner's objections to the specification.

Rejection of Claims Pursuant to 35 U.S.C. §102

Claims 1 and 2 were rejected as being anticipated by Kemeny, U.S. Patent No. 5,599,106. Applicants respectfully traverse this rejection for the following reasons.

Specifically the Examiner alleges that Kemeny discloses an isolation platform (said to be feature 20 in Fig. 2) for

supporting a structure comprising upper and lower plates having a plurality of conical bearing surfaces defining bearing cavities formed between the upper and lower plates, and wherein the lower plate is secured to a foundation. Kemeny repeatedly indicates that the structures disclosed therein are not platforms but bearings: for example, the Title of the '106 patent is "Ball-In-Cone Seismic Isolation Bearings" (emphasis added); and the '106 patent discloses "[t]he invention relates to seismic isolation bearings for buildings, bridges and other structures" column 1, lines 6-7 (emphasis added).

By contrast, the invention of claim 1, as amended, is a platform comprising an upper plate and a lower plate, each plate comprised of a plurality of bearing surfaces containing a conical recess and linked by connecting members, and spherical bearings between upper and lower bearing surfaces. The '106 patent discloses bearings and does not disclose a platform, possibly because, as cited above, the '106 patent discloses seismic isolation of buildings bridges, and other structures, while the present invention is directed to a platform "to filter vibrations and reduce noise in devices supported by" the platform. Specification, sentence bridging pages 5 and 6.

Furthermore, the '106 patent does not disclose a device comprising an upper plate and a lower plate, each plate comprised of a plurality of bearing surfaces or plate segments containing conical recesses and linked by connecting members. Indeed, the '106 patent is devoid of any mention of connecting members at all.

Finally, although page 4 of the Office Action says that

Kemeny discloses a retention mechanism (feature 14) for securing the lower plate and upper plate together, this is in fact not the case. Figure 1, feature 14 is drawn to bolts for securing the upper bearing plate to the structure, and the lower plate to the foundation; therefore the bolts do not secure the plates together.

For this reason claims 1 and 2 are not anticipated by the '106 patent, and Applicants respectfully ask that the Examiner reconsider and withdraw this ground of rejection.

Rejection of Claims Pursuant to 35 U.S.C. §103

Claims 3 and 4 were rejected as being allegedly obvious over the combination of Kemeny, U.S. Patent No. 5,599,106 in view of Kawai et al., U.S. Patent No. 5,934,029. Applicants respectfully traverse this rejection for the following reasons.

The Office Action prefacing this rejection by stating that "Kemeny discloses the platform as set forth above" but does not disclose plates linked by connecting members which define the plates and a plurality of interstitial regions. However, Kawai is said to disclose in Fig. 13 "an upper plate comprising a plurality of upper plate segments (1) attached to a plurality of corresponding upper connecting members (5a) which define said upper plate and further define a plurality of upper interstitial regions (area between members 5a)" and a "lower plate comprising a plurality of lower plate segments (2) attached to a plurality of corresponding upper connecting members (5b) which define said lower plate and further define a plurality of lower interstitial regions (area between members 5b)".

As an initial matter, Applicants note that reference numerals 1 and 2 do not exist in the '029 patent, and were added to Fig. 13 by the Examiner.

A review of the '029 patent reveals that, following a discussion of the base isolation structure shown in Fig. 12, Fig. 13 is briefly described in the Background of the Invention as follows:

FIG. 13 is a plan view of the middle base frame. As clearly shown in this figure, between adjacent two upper roller bearings 6a is extending one continuous middle plate 5a in a direction in which these roller bearings rotate. Further, between adjacent two lower roller bearings (not shown) is extending one continuous middle plate 5b in a direction in which these roller bearings rotate. That is, the middle plates for two base isolation mechanisms M located on an imaginary straight line are connected with each other into a unitary plate. As is obvious, the middle plates of the base isolation mechanisms arranged in a plurality of places have been conventionally provided by a common long plate.

Kawai et al., U.S. Patent No. 5,934,029, column 2, lines 42-53 (emphasis added).

A review of the text of the '029 patent proceeding the quoted passage above indicates that this passage refers to the features of Fig. 12. This text in turn refers to the "middle base frame" in the following passage:

As a method for putting the base isolator as shown in FIG. 12 into practical use, a lower base frame, a middle base frame and an upper base frame provided with members which operate as the lower plate 4, the middle plate 5 and the upper plate 2, respectively, are formed in identical dimensions and stacked on one another. The aforementioned lower roller bearing and upper roller bearing are

interposed between these members at the four corners, thereby forming four base isolation mechanisms.

Kawai et al., U.S. Patent No. 5,934,029, column 2, lines 32-39 (emphasis added).

Thus, study of the Kawai reference reveals that Fig. 13 does not refer to separate upper and lower plates at all. Instead 5a and 5b are oppositely oriented but affixed features of the middle base frame of a prior art isolator, which is shown in Fig. 12 as a tripartite sandwich of upper (2), middle (5), and lower (4) plates.

Furthermore, Kawai does not disclose "upper and lower" interstitial regions, or a plurality of such regions. The Office Action indicates that "a plurality of interstitial regions" is illustrated as the area between members 5b (defined as "middle plate 5b" in the '029 patent. However the area between middle plate 5b is a single continuous area, not a "plurality" of regions.

In sum, Fig. 13 of Kawai et al. discloses the middle part of an isolator comprising three sandwiched plates that depends upon roller bearings operating in only two dimensions, and respectfully fails to disclose that which the Office Action contends it does. Combined with the fact that the Kemeny patent describes bearings rather than a platform, the combination of Kemeny and Kawai et al. is substantially different from the invention of claims 3 and 4 of this application, and these substantial differences would cause a person of ordinary skill in the art at the time of this invention to regard the invention to be non-

obvious in light thereof.

For this reason, Applicants respectfully ask that the Examiner reconsider and withdraw the rejection of claims 3 and 4.

Claims 5 and 6 were rejected as being allegedly obvious over the combination of Kemeny, U.S. Patent No. 5,599,106 and Kawai et al., U.S. Patent No. 5,934,029, as applied to claims 3-4 above, and further in view of Kwon et al., U.S. Patent No. 5,452,548. Applicants respectfully traverse this rejection for the following reasons.

Applicants have already explained why the combination of Kemeny, U.S. Patent No. 5,599,106 and Kawai et al., U.S. Patent No. 5,934,029 do not disclose what the Office Action contends it does. Kwon is said to disclose providing an interstitial region of an isolation device with a filler material, citing Fig. 1, reference numeral 48 thereof.

Fig. 1 of Kwon is drawn to a metal plate anchor bearing. Reference numeral 48 is stated to be "synthetic rubber sealer", this sealer fills a gap between multilayered plates 34 and anchor bar 42 and functions as a filler to cushion the superstructure. This is actually better shown in Fig. 11 of Kwon et al. Kwon does not show an interstitial region defined in an upper plate or in a lower plate; the "gap" of Kwon is between, rather than in, the plates.

In sum, neither the combination of Kemeny and Kawai et al. alone, or with the addition of Kwon disclose an upper plate

having a plurality of downward-facing, conical, rigid bearing upper plate segments linked by connecting members and defining upper interstitial regions, or a lower plate having a plurality of downward-facing, conical, rigid bearing lower plate segments linked by connecting members and defining lower interstitial regions (claims 3 and 4), wherein the upper and lower interstitial regions are respectively filled with a solid filler material (claims 5 and 6). Indeed, there is no hint of such a structure in this combination of references.

For this reason, Applicants submit that the invention of claims 5 and 6 is not obvious, and respectfully ask that the Examiner reconsider and withdrawn the present rejection.

Claims 7 and 8 were rejected as being allegedly obvious over the combination of Kemeny, U.S. Patent No. 5,599,106 and Kawai et al., U.S. Patent No. 5,934,029. Applicants respectfully traverse this rejection for the following reasons.

On page 7, paragraph 8 the Office Action states that Kemeny discloses first and second open pan structures but does not disclose the first and second pan structures having four plates or wherein the pan structures are movably fastened together with straps. Kawai is said to disclose an isolation platform comprising two pan structure having four plates.(1) With regard to the pan structures being fastened together by straps, Kemeny is said to disclose fastening the pan structures with bolts(14).

As stated above, Kawai does not disclose a "two pan structure" at all; all of Kawai's isolators comprise a three pan "sandwich". Thus, Fig. 1 of Kawai is a top view of a isolator

placed above a floor 33 surrounded by walls 31. In column 8, lines 8-31 of Kawai the '029 patent discloses that "[a]s shown in Figs 5 through 7, the base isolation unit U includes a **rectangular middle plate 40**, an upper support body [roller] 50 which is provided between the middle plate 40 and the **upper plate 35** and is rotatable up to an angle of 180 degrees bidirectionally as indicated by arrow "a" in Fig. 6, and a lower support body 60 [roller] which is provided between the middle plate 40 and the **lower plate 36**. Thus, the isolator of Kawai is not a "two pan structure".

Furthermore, as explained above, the bolts shown in Kemeny do not fasten the plates together, but are used to fasten the plates to the structure to be supported and to the foundation, respectively.

The fact is that the combination of Kemeny and Kawai would not, at the filing date of the present application, have rendered the invention encompassed by claims 7 and 8 obvious to a person of ordinary skill in the art in any way. For this reason, the Applicants ask that the Examiner reconsider and withdraw this ground of rejection.

Claim 9 was rejected as allegedly obvious over the combination of Kemeny and Kawai "as applied to claim 7" and further in view of Yano. Applicants respectfully traverse this rejection.

As indicated above the combination of Kemeny and Kawai do not render this present invention obvious. Yano is said to disclose an isolation platform open on one longitudinal end in Fig. 1 to allow access to cables (5). However, this

characterization of Figure 1 of Yano is not accurate. Figure 1 of Yano is a side view if an isolator showing two mounts and one damper; Yano, column 2, lines 10-13. Damper 4 is a magnetic damper including an electromagnet 41 disposed within a frame structure in the form of a slit member defined by one or more coils. Contrary to the assertion s of the Office Action, feature 5 is not "cables" but is "[a]n accelerometer, a velocimeter, or a vectormeter serving as a sensor". Yano, column 3, lines 3-4.

For this reason the rejection of claim 9 as being allegedly obvious over Kemeny, Kawai, and Yano is respectfully submitted to have been overcome.

CONCLUSION

For the reasons provided above the Applicants submit that the claims are now in condition for allowance, and respectfully request that the Examiner issue a Notice to that effect. If any minor issues remain and it is thought that a telephone conference with the undersigned would expedite the resolution of these matters, the Examiner is invited to call the undersigned at any time.

Applicants hereby request a one month extension of time to submit this response. Please use Deposit Account 21-0890 for the payment of this and any other any fee now due in connection with this communication, or to credit any overpayment.

Respectfully submitted,



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